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superficial resemblance to that of a Swallow is structurally more nearly like that of such a typical Tanager as *Piranga erythromelas*; but in the characters of the palate, *Procnias* departs so widely not only from the Tanagers but from the large majority of Passerine birds, as to warrant the establishment of a separate family for the members of the genus." The pterylographical notes have been contributed by Mr. Hurbert L. Clark, who says that while the pterylosis of *Procnias* is evidently passerine, it "shows no particular leaning to any group." Figures are given of the palatal region of the skull, and of the dorsal feather tracts, the former in comparison with a Swallow and a Tanager, and the latter with those of several species of Tanagers. — J. A. A.

Montgomery on Migration as a Check upon Geographical Variation¹.—The evidence is so clearly in favor of Mr. Montgomery's proposition that few doubtless will question the correctness of his main conclusions. While we do not recall having seen the matter formally stated, doubtless the coincidences here stated have not failed of recognition on the part of many students of geographical variation. The author calls attention to the fact that birds which are non-migratory, or which migrate only to a limited extent, in case they have also a wide geographical distribution, are apt to become differentiated into more or less well-marked subspecies under the varying conditions of environment of the widely separated parts of their range, while birds that migrate extensively, say through 30° or more of latitude, even if widely dispersed during the breeding season, seldom show a tendency to become differentiated into subspecies. This he believes is due to the fact that "the influence of the winter environment acts as a check upon the acquisition of adaptations suited alone to the summer environment."—J. A. A.

Contributions to Economic Ornithology.—The 'Yearbook of the U. S. Department of Agriculture for 1895', recently issued, contains two noteworthy contributions to economic ornithology. Mr. Sylvester D. Judd reports on the food and general habits of the Catbird, Brown Thrasher, Mockingbird, and House Wren, each species being illustrated with an excellent full-length cut by Mr. J. L. Ridgway. The verdict is favorable to all, as they subsist largely upon injurious insects. The House Wren is "exclusively insectivorous"; the others live partly on fruits, some of which are cultivated.

¹ Extensive Migration in Birds as a Check upon the Production of Geographical Varieties. By Thomas H. Montgomery, Jr., American Naturalist, June, 1896, pp. 458-464.

² Four Common Birds of the Farm and Garden. By Sylvester D. Judd, Assistant Ornithologist, U. S. Department of Agriculture. Yearbook of the U. S. Department of Agriculture for 1895, pp. 405-418, with 4 cuts.

Prof. F. E. L. Beal¹ writes of the Meadowlark and Baltimore Oriole, which species are also well figured. About 83 per cent of the Oriole's food consists of insects, of which more than one-third are caterpillars. Despite a slight taste for green peas, and a propensity to puncture grapes, the farmer is counselled "to hold his good opinion of the Oriole, and accord it the protection it so well deserves." The food habits of the Meadowlark are almost above reproach; "far from being injurious, it is one of the most useful allies to agriculture, standing almost without a peer as a destroyer of noxious insects."

The 'Report on the Gypsy Moth,' by Mr. Edward H. Forbush and Prof. Charles H. Fernald,² recently published under the direction of the State Board of Agriculture of Massachusetts, contains 40 pages (pp. 203-243) on 'The Usefulness of Birds as Insect Destroyers,' prepared by Mr. Forbush as a part of his chapter on the 'Natural Enemies of the Gypsy Moth.'

After several pages of introductory matter on the general subject of the utility of birds as insect destroyers, Mr. Forbush gives a list of 38 species of birds seen to feed on the gypsy moth, only about a dozen of which, however, seem to be especially useful as destroyers of this pest. These are mentioned specifically and in detail, there being a short report about each; then follow remarks about other useful birds, and many pages of field observations, showing how the birds are attracted to the infested localities and their methods of attacking the moth in its various stages of existence. These field notes on the various birds observed give striking evidence of the usefulness of birds as insect destroyers. With such facts before him it is natural that Mr. Forbush should urge better protection for our birds. As Massachusetts is much the same—at least no worse—than other parts of the country, we may well quote the following from Mr. Forbush's appeal for the birds. "While the present laws for the protection of insectivorous birds are wise in the main, no adequate provision

¹ The Meadow Lark and Baltimore Oriole. By F. E. L. Beal, Assistant Ornithologist, U. S. Department of Agriculture. Yearbook of the U. S. Department of Agriculture for 1895, pp. 419-430, with 2 cuts.

² The Gypsy Moth, *Porthetria dispar* (Linn.). A Report on the Work of destroying the Insect in the Commonwealth of Massachusetts, together with an Account of its History and Habits both in Massachusetts and Europe. By Edward H. Forbush, Field Director in Charge of the work of destroying the Gypsy Moth, Ornithologist to the State Board of Agriculture, etc., and Charles H. Fernald, A. M., Ph.D., Professor of Zoölogy in the Massachusetts Agricultural College, Entomologist to the State Board of Agriculture, etc. Published under the direction of the State Board of Agriculture by Authority of the Legislature. Boston: Wright & Potter Printing Co., State Printers, 18 Post Office Square. 1896, 8vo. pp. xii + 495 + c, with 5 maps, 65 plates, and numerous cuts.

is made for their enforcement, and they are consequently a dead letter to certain classes of people. A great many birds are killed and many nests broken up by boys. In the fall the country swarms with gunners. Thousands of birds are killed for the milliners. The camps of Italians, where employees engaged on public works are quartered, furnish many of these gunners. These men will shoot birds of any kind, anywhere and on any man's premises. Everything that wears feathers is considered by them as fair game." He advocates the appointment of officers to enforce the laws, and the education of children regarding the usefulness of birds, and holds that it should generally be considered a crime to destroy insect-eating birds. Laws, however good, will not execute themselves, and officers should certainly be provided to rigidly enforce the statutes for the protection of birds.

Mr. Forbush has also recently published a paper on the economic status of the Crow,¹ in which he treats of its migrations and general habits, especially in relation to its food. After commenting at length on previous reports on the food of the Crow, and giving many original observations of his own on the subject, he closes his paper without taking a very decided stand in regard to whether the Crow has been shown to be more useful than destructive to the interests of the farmer. Finally, after weighing the evidence, pro and con, he says that "from what is now known about the Crow's food we may conclude that, unless the birds become unduly numerous, they are likely to be of great service to the farmer. It will pay the farmer to sacrifice some portion of his products to the Crow, provided he uses care that the cunning bird does not overreach him in the bargain."

A further excellent contribution to the literature of economic ornithology is a series of papers by Miss Florence A. Merriam in recent issues of 'Forest and Stream,' under the title, 'How Birds affect the Farm and Garden', and since separately republished.² The introductory pages treat of the losses caused by insects, and the usefulness of birds in holding the insect pests in check; some 40 species of North American birds are then dealt with formally, followed by 'Conclusion', giving a list of some of the most formidable of our insect enemies and of the birds that have been proved to be their natural enemies. Speaking of the scientific investigation of the food habits of birds, Miss Merriam says: "So far as it has gone, the examination of the stomach contents of birds has proved that,

¹The Crow in Massachusetts. By E. H. Forbush, Ornithologist to the Board. Bulletin of the Massachusetts Board of Agriculture, Ser. of 1896, No. 4, August, 1896, pp. 24-40.

²How Birds affect the Farm and Garden. By Florence A. Merriam. Forest and Stream, Vol. XLVII, 1896, No. 6, Aug. 8, pp. 103, 104; No. 7, Aug. 15, pp. 123, 124; No. 8, Aug. 22, pp. 144, 145. Also separate, under the same title, 16mo., pp. 32.

except in rare cases, where individuals attack cultivated fruits and grains our native birds merely preserve the balance of nature by destroying weeds that plague the farmer and by checking the insects that destroy the produce of the agriculturist. The great value of birds is demonstrated. The question is first how to attract them where they have disappeared, and then how to protect the crops from their occasional depredations."

The English Sparrow comes in for severe condemnation. "It has been shown to interfere with seventy kinds of our own birds, most of which nest about houses and gardens and are beneficial to the farm and garden." Its extermination is advocated. "Bounty laws cannot do this, for, as has been clearly demonstrated, they do more mischief than can be easily remedied, as money is usually spent on the heads of valuable birds that have been mistaken for the injurious ones. But the work might be effectively done by State boards or commissioners, who should hire trained assistants to destroy the birds and their nests."

Miss Merriam's articles are illustrated with numerous cuts of the birds and insects especially mentioned, derived mainly from the recent publications on these subjects by the U. S. Department of Agriculture.—J. A. A.

Publications Received.—**Alfaro**, Anastasio. Museo Nacional de Costa Rica. Informe presentado al Señor Secretario de Estado en el Despacho de Fomento por Anastasio Alfaro, Administrador del Museo. 4to, 1896, pp. iv + 40.

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Beal, F. E. L. The Meadowlark and Baltimore Oriole. (Yearbook U. S. Dept. of Agric. for 1895 (1896), pp. 419-430.)

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Bocage, J. V. Barboza du. Mamíferos, Aves e Reptis da Hanha, no Sertão de Benguella. (Jorn. de Sci. math., phys. e nat. da Acad. real das Sci. de Lisboa, Ser. 2, IV, No. xiv, May, 1896.)

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